Work Order ID 69876

Tuesday, May 24, 2011 8:26:22 AM

Item ID: D350-636-012 **Accept** **Setup Start**

Revision ID: **Stop**

Item Name: Skidtube RH

Start Date: 5/24/2011 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 5/30/2011 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** ___ **Date:** 11-05-24 **Tooling:** ___ **Date:** ___ **Run Start**

QC: ___ **Date:** ___ **SPC (Y/N):** ___ **Date:** ___ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
100	DOCUMENT CONTROL	0.00							
DC									
Document Control		0.00							

Draw Nbr	Revision Nbr
D2750	F
D3492	C

Memo

Photocopy blue file and type labels per PPP D350-636-012 CHG 006

E Morales

for BG 11-6-16

69876

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE

Work Order ID 69876

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110		0.00							
Skidtubes	Skidtubes								
Skidtubes	**Memo**	0.00							
Skidtubes	1- Pick D2600-3 Bent								

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.

4- Locate DT8329 off of blade fitting bolt holes and drill pilot holes for blade fitting

5- Drill only two fwd step holes using DT9616. Ensure proper positioning.

NOT INCL

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-2 details).Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail K)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B. ***SECOND SIDE***

DETAIL K

8-Open up holes for Detail B to 0.375" (4 holes per side)and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750 .Open up holes for ground handling and detail L to 0.500" (8 holes per side)

9-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297".

10-Open up holes of Detail A to 0.297" (total of 2 holes per side)

JBB 11/05/28

Dart Aerospace Ltd

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
	11-Weld D2744 Cap as per Dwg D2750 and QSI 004.Fill grooves in bend left from bending as per QSI 004 A/R Aluminum Rod batch:☐ M116577		BE 11/05/30 BB 11/05/30						
	12-Grind welds flush as per Dwg D2750								
120 QC Quality Control	QC10- Inspect visual per QSI004- ground welds	0.00							
	Memo	0.00	S 11/05/31						
130 QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00							
	Memo	0.00	S 11/05/31			4			

Dart Aerospace Ltd

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Chemical Conversion Coat per QSI005 4.1	0.00							
HandFinish	**Memo**	0.00							
Hand Finishing									11/05/31
150	QC3- Inspect Part Finish	0.00							
QC	**Memo**	0.00							11-5-31
Quality Control									

Dart Aerospace Ltd

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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	Skidtubes	0.00							
Skidtubes		0.00							
Skidtubes									

Memo

1-Open up holes of Detail L and ground handling to 0.625" (total of 8 holes per side) as per dwg D2750.

2-Open up holes of Detail K to 0.750" (total of 4 holes per side) as per dwg D2750.

3-Open float holes to .500" (4 per Side)

4-Chamfer holes of Detail K, L, ground handling and float holes per dwg D2750 (welding instructions on sheet 9)

5-Deburr and blow out all chips from inside of tube

6-Prepare tube for welding, remove alodine as required.

DL, 11/05/31

7-Bond web D2739 in place as per QSI 015
A/R ☐ Sikaflex-291 batch: 116945 ☐☐☐
exp. date: 12/01/15

BB 11/05/31

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004 (welding instructions on sheet 9)
A/R☐ Aluminum Rod batch: M117456 BE 11/06/02

9- At section AP-AP drill out x-bolt spacer to 0.404" BE 11/06/02

10-Grind welds flush as per Dwg D2750

11-Spot face ground handling holes section (total of 4 places per side) as per

BB 11/06/06

Dart Aerospace Ltd

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
	dwg D2750 12-Deburr holes								11/06/06
170 QC Quality Control	QC10- Inspect visual per QSI004- ground welds **Memo**	0.00 0.00							
180 QC Quality Control	QC5- Inspect part completeness to step on W/O **Memo**	0.00 0.00							

Dart Aerospace Ltd

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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	Pressure Wash per QSI005 4.3	0.00							
HandFinish	**Memo**	0.00							
Hand Finishing	Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.								
200	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
Powdercoat	**Memo**	0.00							
Powder Coating	START TIME: 1:40 OVEN TEMPERATURE: 320 °F FINISH TIME: 2:40								
210	QC3- Inspect Part Finish	0.00							
QC	**Memo**	0.00							
Quality Control	Inspect for foreign object per QSI 024								

1X Ø mf 11/06/14

1X Ø mf 11/06/14

1 BR 11-6-15.

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	HandFinishing	0.00				1	ϕ	BL	11-6-15
HandFinish	**Memo**	0.00							
Hand Finishing	Install inserts as per dwg D2750								
230	HandFinishing	0.00							
HandFinish	**Memo**	0.00							
Hand Finishing						1		BL	11-6-15.

1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3"
batch:_____

3-Install blade fitting D3488-042, wearshoes and ground handling hardware as per dwg D2750
SIKA FLEX 241
BATCH: 117516
EXP DATE: 15-01.

4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube
A/R 55-o'ring lube batch: 114189

5-Coat all exposed fasteners with "LPS Procyon"
batch: 114596.

Dart Aerospace Ltd

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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control									
250	Pick Kit	0.00							
Packaging	Memo	0.00							
Packaging									
260	QC4- 100% Inspect kits for completeness	0.00							
QC	Memo	0.00							
Quality Control									

Dart Aerospace Ltd

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Stop

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270		0.00							
Packaging	Packaging								
Packaging	**Memo**	0.00							
Packaging	Package as per PPP D350-636-012								
280	QC21- Final Inspection - Work Order Release	0.00							
QC	**Memo**	0.00							
Quality Control									

Rent

11/6/2017

mf 11-06-17

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Picklist Print

Tuesday, May 24, 2011 8:26:30 AM

Work Order ID: 69876

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/24/2011 **Required Date:** 5/30/2011

Start Qty: 1.00 **Required Qty:** 1.00

Comments: IPP Rev:I□02.09.25□Rearranged procedure steps□KJ□
IPP Rev:J 06-03-29 As per Rev D EC
IPP Rev:K 06-07.13 As per dsi9343 EC
IPP Rev:L 07-07-28 Added SS Wearplates(Rev E) JLM Verified By:EC
IPP Rev:M 08-04-22 update steps 4,13 DD verified by:EC
IPP Rev:N 08-09-23 revF as per dwg DD verified by:ec IPP Rev:O 10.06.22 revise seq110 DD verf:EC IPP Rev:P 10.10.01 as per IIN revH DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
ALS4-1032-225		Purchased	No			220	Each	1,617.000	38	38			
Insert													
				Location		**Loc Qty**		**Loc Code**					
				ST282		1617							
					110768	817							
					117717	800				38. BR 11-6-15			
AN3C5A		Purchased	No			230	Each	1,586.000	34	34			
Bolt													
				Location		**Loc Qty**		**Loc Code**					
				FP-A		7							
					115835	7							
				ST350		1579							
					115422	49							
					116419	334							
					116549	96							
					117343	500							
					117508	300				34 BR 11-6-15.			
					117764	300							

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Work Order ID: 69876

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/24/2011 **Required Date:** 5/30/2011

Start Qty: 1.00 **Required Qty:** 1.00

AN3C6A BOLT	Purchased	No	230	Each	410.0000	4	4	

Location	Loc Qty	Loc Code
FP-A	1	
111982	1	
ST351	409	
111982	2	
116419	23	
116549	50	
116704	84	
117514 ✓	100	
117619	50	
117688	100	

4 - BR 11-6-15

AN6C44A BOLT	Purchased	No	230	Each	113.0000	4	4	

Location	Loc Qty	Loc Code
FG	2	
103964	2	
ST344	111	
117407 ✓	80	
117763	31	

4 BR 11-6-15.

AN8C35A BOLT	Purchased	No	230	Each	69.0000	1	1	

Location	Loc Qty	Loc Code
FP	40	
117511	40	
FP-A	29	
115960	6	
116874 ✓	23	

1 BR 11-6-15.

Dart Aerospace Ltd

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Parent Item Name: Skidtube RH

Start Date: 5/24/2011 **Required Date:** 5/30/2011

Start Qty: 1.00 **Required Qty:** 1.00

AN960C10L	NAS1149C0332 R	Purchased	No	230	Each	0.0000	38	38	
washer				117291				38	BR 11-6-15
* AN960C816L		Purchased	No	230	Each	0.0000	1	1	
WASHER		NAS1149C0832R		114915				1	BR 11-6-15.
D2745		Manufactured	No	230	Each	206.0000	8	8	
Bushing									

Location	Loc Qty	Loc Code
FP-A	206	
67764	5	
68248	201	

8 BR 11-6-15

D3488-042		Manufactured	No	230	Each	24.0000	1	1	
Blade Fitting Assembly, RH									

Location	Loc Qty	Loc Code
FP008	24	
62003	4	
65099	8	
68109	12	

1 BR 11-6-15.

D3492-1		Manufactured	No	230	Each	0.0000	8	8	
Plug				69531				8	BR 11-6-15-
D3492-3		Manufactured	No	230	Each	0.0000	8	8	
Plug				69822				8	BR 11-6-15.

Dart Aerospace Ltd

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Parent Item Name: Skidtube RH

Start Date: 5/24/2011 **Required Date:** 5/30/2011

Start Qty: 1.00 **Required Qty:** 1.00

D3535-25 Wearshoe	Manufactured	No	230	Each	30.0000	1	1	

Location	Loc Qty	Loc Code
FP018	30	
62233	1	
65167	3	
68353	11	
69284	15	

1 BR 11-6-15

D3536-25 Gasket	Manufactured	No	230	Each	34.0000	1	1	

Location	Loc Qty	Loc Code
FP012	34	
65903	8	
68351	26	

1 BR 11-6-15

D3537-1 Wearpad	Manufactured	No	230	Each	34.0000	3	3	

Location	Loc Qty	Loc Code
FP017 68017	34	
63313	2	
66804	28	
66935	4	

3 BR 11-6-15.

D3631-1 Washer	Manufactured	No	230	Each	500.0000	8	8	

Location	Loc Qty	Loc Code
ST072	500	
68062	500	

8 BR 11-6-15

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Picklist Print

Tuesday, May 24, 2011 8:26:32 AM

Work Order ID: 69876

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/24/2011 **Required Date:** 5/30/2011

Start Qty: 1.00 **Required Qty:** 1.00

D3672-1	Manufactured	No	230	Each	1,350.000	8	8	
Phenolic Washer								

Location	Loc Qty	Loc Code	
ST074	1350		
64177 ✓	850		4 BR 11-6-15
66821	500		

D3791-1	Manufactured	No	230	Each	19.0000	1	1	
Wearplate								

Location	Loc Qty	Loc Code	
FP017	19		
62239	7		
68352 ✓	12		1 BR 11-6-15

D3793-1	Manufactured	No	230	Each	31.0000	1	1	
Wearshoe								

Location	Loc Qty	Loc Code	
FP018	31		
64445 ✓	14		1 BR 11-6-15
69285	17		

D3793-3	Manufactured	No	230	Each	30.0000	1	1	
Wearshoe								

Location	Loc Qty	Loc Code	
FP018	21		1 BR 11-6-15.
68356 ✓	13		
69283	8		
FP019	9		
64447	9		

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Picklist Print

Tuesday, May 24, 2011 8:26:32 AM

Work Order ID: 69876

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/24/2011 **Required Date:** 5/30/2011

Start Qty: 1.00 **Required Qty:** 1.00

D3794-1	Manufactured	No	230	Each	32.0000	1	1	
Gasket								

Location	Loc Qty	Loc Code
FP010	32	
39421	1	
61704	5	
68355 ✓	26	

1 BR 11-6-15

D3794-3	Manufactured	No	230	Each	34.0000	1	1	
Gasket								

Location	Loc Qty	Loc Code
FP010	26	
68357 ✓	26	
FP018	8	
39422	1	
61712	7	

1 BR 11-6-15

MS21043-6	Purchased	No	230	Each	523.0000	4	4	
NUT								

Location	Loc Qty	Loc Code
FG	20	
103693	20	
FP-A	40	
112314 ✓	40	
ST301	463	
112314	463	

4 BR 11-6-15.

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE

Picklist Print

Tuesday, May 24, 2011 8:26:32 AM

Work Order ID: 69876

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/24/2011 **Required Date:** 5/30/2011

Start Qty: 1.00 **Required Qty:** 1.00

MS21083C8 NUT	Purchased	No	230	Each	113.0000	1	1	

Location		Loc Qty	Loc Code
FP-B		1	
	115884	1	
ST303		112	
	115884	0	
	117291	37	
	117423	50	
	117677	25	

1 BR 11-6-15

NAS1611-010 O-RING	Purchased	No	230	Each	266.0000	8	8	

Location		Loc Qty	Loc Code
FP		80	
	117460	80	
FP-A		186	
	110915	139	
	115589	47	

8 BR 11-6-15.

NAS1611-013 O-RING	Purchased	No	230	Each	168.0000	8	8	

Location		Loc Qty	Loc Code
FP		163	
	117291	123	
	117460	40	
FP-A		5	
	116582	5	

8 BR 11-6-15.

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Tuesday, May 24, 2011 8:26:32 AM

Work Order ID: 69876

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/24/2011 **Required Date:** 5/30/2011

Start Qty: 1.00 **Required Qty:** 1.00

AN8C21A BOLT	Purchased	No	250	Each	101.0000	2	2	

Location	Loc Qty	Loc Code
ST344	25	
117764	25	
ST345	76	
116381	26	
117562	50	

AN960JD816 1/2" washer,Alum	Purchased	No	250	Each	43.0000	2	2	

Location	Loc Qty	Loc Code
FP-A	43	
106043	43	

D2741 Blade, 350 Skidtube	Manufactured	No	250	Each	44.0000	1		

Location	Loc Qty	Loc Code
ST466	44	
61341	6	
63589	38	

D3493-1 Washer	Manufactured	No	250	Each	72.0000	2	2	11/6/10 SP

Location	Loc Qty	Loc Code
ST062	72	
66975	31	
68253	41	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Picklist Print

Tuesday, May 24, 2011 8:26:33 AM

Work Order ID: 69876

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/24/2011 **Required Date:** 5/30/2011

Start Qty: 1.00 **Required Qty:** 1.00

D3532-1 Spacer	Manufactured	No	250	Each	35.0000	2	2	11/6/14

Location	Loc Qty	Loc Code	
ST065	35		
62218	13		
66949	22		2

MS21083C8 NUT	Purchased	No	250	Each	113.0000	2	2	11/6/14 SP

Location	Loc Qty	Loc Code	
FP-B	1		
115884	1		
ST303	112		
115884	0		
117291	37		
117423	50		2
117677	25		

D2600-3-BENT Extrusion Bent	Manufactured	No	110	Each	14.0000	1	1	

Location	Loc Qty	Loc Code	
LG	14		
66875	8		
68137	6		1

BB 11/05/28

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Tuesday, May 24, 2011 8:26:33 AM

Work Order ID: 69876

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/24/2011 **Required Date:** 5/30/2011

Start Qty: 1.00 **Required Qty:** 1.00

D2744	Manufactured	No	110	Each	26.0000	1	1	BE 11/05/30
Cap								

Location	Loc Qty	Loc Code	
LG002	26		
62715	2		
65086	24		1

D2739	Manufactured	No	160	Each	4.0000	1	1	
350 I Beam								

Location	Loc Qty	Loc Code	
LG 69538	4		1 BB 11/05/31
67785	1		
68285	3		

D2743	Manufactured	No	160	Each	162.0000	8	8	BE 11/06/02
Crossbolt Spacer								

Location	Loc Qty	Loc Code	
LG	63		
68948	63		8
LG001	99		
67766	35		
68251	64		

D3490-3	Manufactured	No	160	Each	86.0000	4	4	BE 11/06/02
Cross Bolt Spacer								

Location	Loc Qty	Loc Code	
LG	86		
68106	22		4
68952	64		

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

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Tuesday, May 24, 2011 8:26:33 AM

Work Order ID: 69876

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/24/2011 **Required Date:** 5/30/2011

Start Qty: 1.00 **Required Qty:** 1.00

D3490-1 Cross Bolt Spacer	Manufactured	No	160	Each	49.0000	4	4	BR 11/06/02

Location	Loc Qty	Loc Code	
LG	47		
67773	5		
68105	42		4
LG001	2		
62450	2		

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

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UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 69824

11-08-24

RELEASED
08.07.22

GENERAL NOTES:

1) MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
2) FINISH:
   ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
   POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
   BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: N/A
7) WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
8) WELD PER DART QSI 004
9) INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES (Ø0.297) FOR WEARSHOE INSERTS
10) FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
    MINIMUM YIELD TENSILE STRENGTH = 35 KSI
    MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
11) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
12) SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL (F)
13) SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

REV.	DESCRIPTION	BY	DATE
F	INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/-3 REPLACES D3535-13/-35 (ZN C8-1); D3794-1/-3 REPLACES D3536-13/-35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS; CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741, QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16

DESIGN	PH	**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN	PH	
CHECKED		DRAWING NO. D2750 — REV. F — SHEET 1 OF 11
MFG. APPR.		
APPROVED		TITLE: 350 SKIDTUBE ASSEMBLY — SCALE: NTS
DE APPR.		
DATE	08.07.16	

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Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

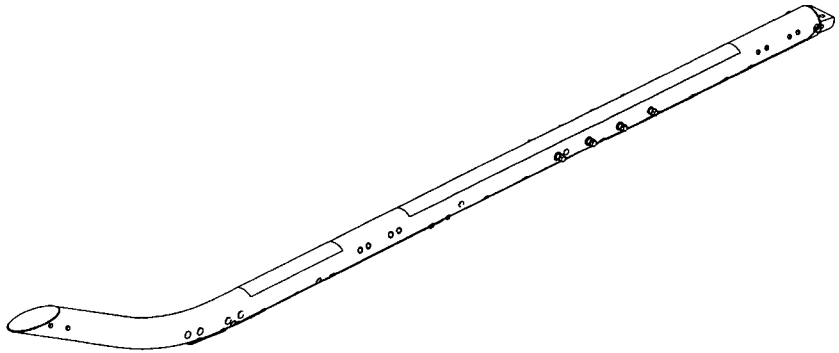
Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

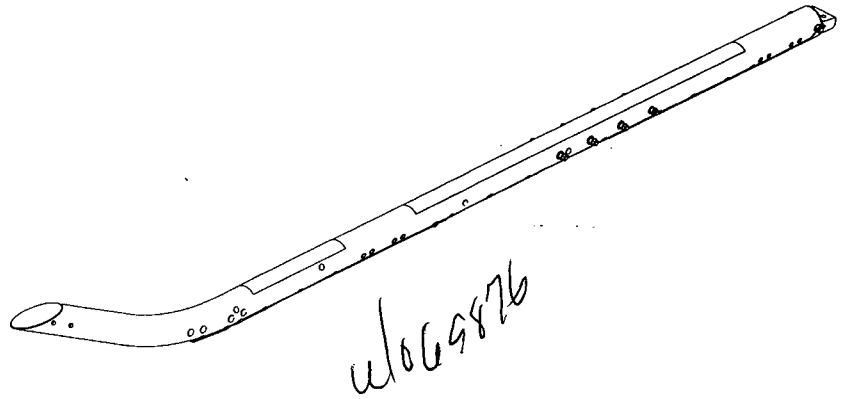
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE



D2750-041 350 SKIDTUBE ASSEMBLY, LH



W069876

D2750-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED 08.9.22

DESIGN		DART AEROSPACE USA, INC. PORT HADLOCK, WA
DRAWN		
CHECKED		DRAWING NO. D2750 — REV. F — SHEET 2 OF 11
MFG. APPR.		
APPROVED		TITLE 350 SKIDTUBE ASSEMBLY — SCALE NTS
DE APPR.		
DATE 08.07.16		

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Dart Aerospace Ltd

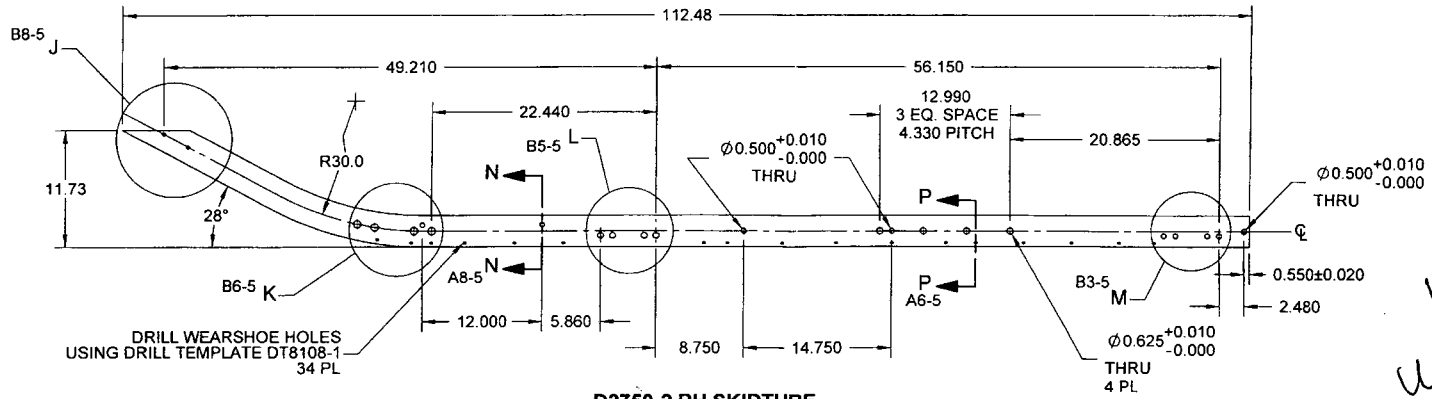
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

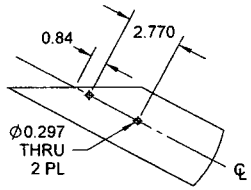
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

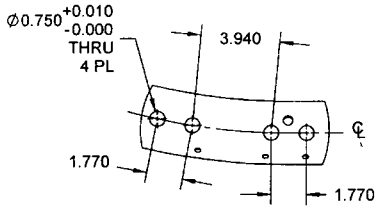


D2750-2 RH SKIDTUBE

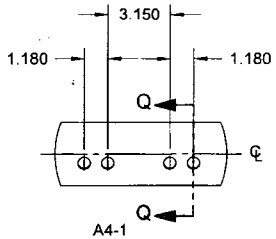
w/069826



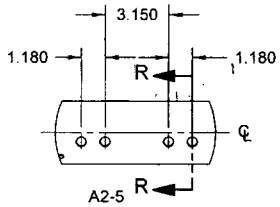
D8-5
DETAIL J
SCALE 2X



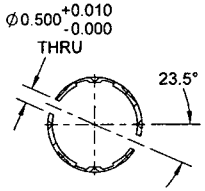
C7-5
DETAIL K
SCALE 2X



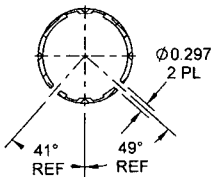
D6-5
DETAIL L
SCALE 2X



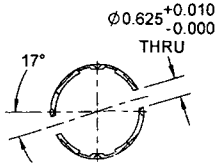
C3-5
DETAIL M
SCALE 2X



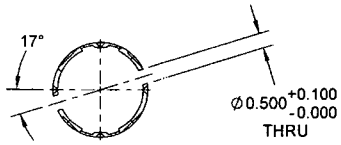
C6-5
SECTION N-N
SCALE 3X, 2 PL



C4-5
SECTION P-P
SCALE 3X, 17 PL



B5-5
SECTION Q-Q
SCALE 3X, 4 PL



B3-5
SECTION R-R
SCALE 3X, 4 PL

RELEASED 08-22-16

DESIGN		**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN		
CHECKED		DRAWING NO. D2750 — REV. F — SHEET 5 OF 11
MFG. APPR.		
APPROVED		TITLE: 350 SKIDTUBE ASSEMBLY — SCALE: NTS
DE APPR.		
DATE	08.07.16	

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Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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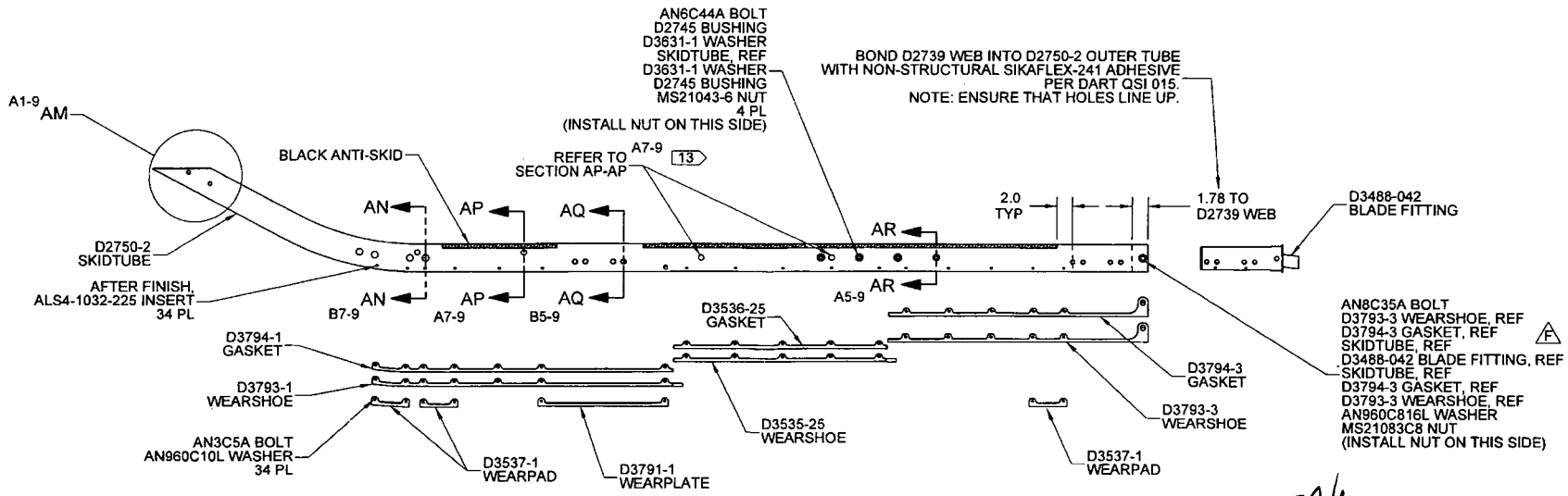
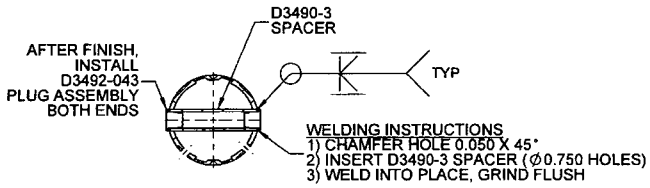
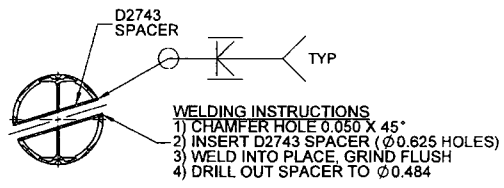


D2750-042 350 SKIDTUBE ASSEMBLY, RH

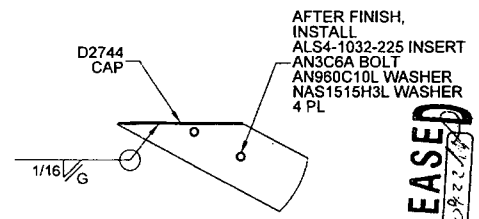
W/O 69576



SECTION AN-AN C7-9
SCALE 3X, 4 PL

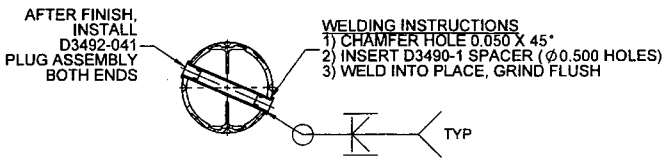


SECTION AQ-AQ C5-9
SCALE 3X, 4 PL

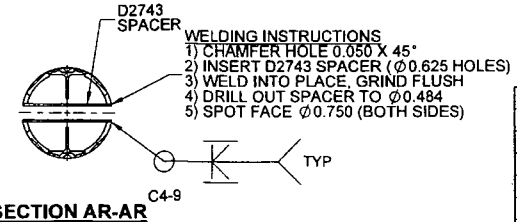


DETAIL AM D8-9
SCALE 2X

RELEASED 08.09.16



SECTION AP-AP C6-9, D5-9
SCALE 3X, 4 PL



SECTION AR-AR C4-9
SCALE 3X, 4 PL
(HARDWARE REMOVED FOR CLARITY)

DESIGN		DART AEROSPACE USA, INC. PORT HADLOCK, WA
DRAWN		
CHECKED		DRAWING NO. D2750 REV. F
MFG. APPR.		SHEET 9 OF 11
APPROVED		TITLE 350 SKIDTUBE ASSEMBLY
DE APPR.		SCALE NTS
DATE	08.07.16	

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Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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NO. 253

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliot
Job number: 67621
Part number: D350·636·011
Description: 350
Welding Process: Tig[X] Mig[ ]
Base materiel: Aluminum
Current: AC[X] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual:	pass[X]	fail[ ]
Penetration:	pass[X]	fail[ ]

UNACCEPTABLE

Cracks:	pass[X]	fail[ ]
Undercut:	pass[X]	fail[ ]
Pin holes:	pass[X]	fail[ ]
Overlap (cold lap)	pass[X]	fail[ ]
Porosity (surface):	pass[X]	fail[ ]
Coloration:	pass[X]	fail[ ]

Qualifier [signature] **Date of Test Coupon** 11·05·19

Welder Barclay Elliot **Date of Test Coupon** 11·05·19

The above named individual is qualified in accordance with AWS D17.1.2001 to weld